

The New World Window: Using Images instead of Data to Collaborate

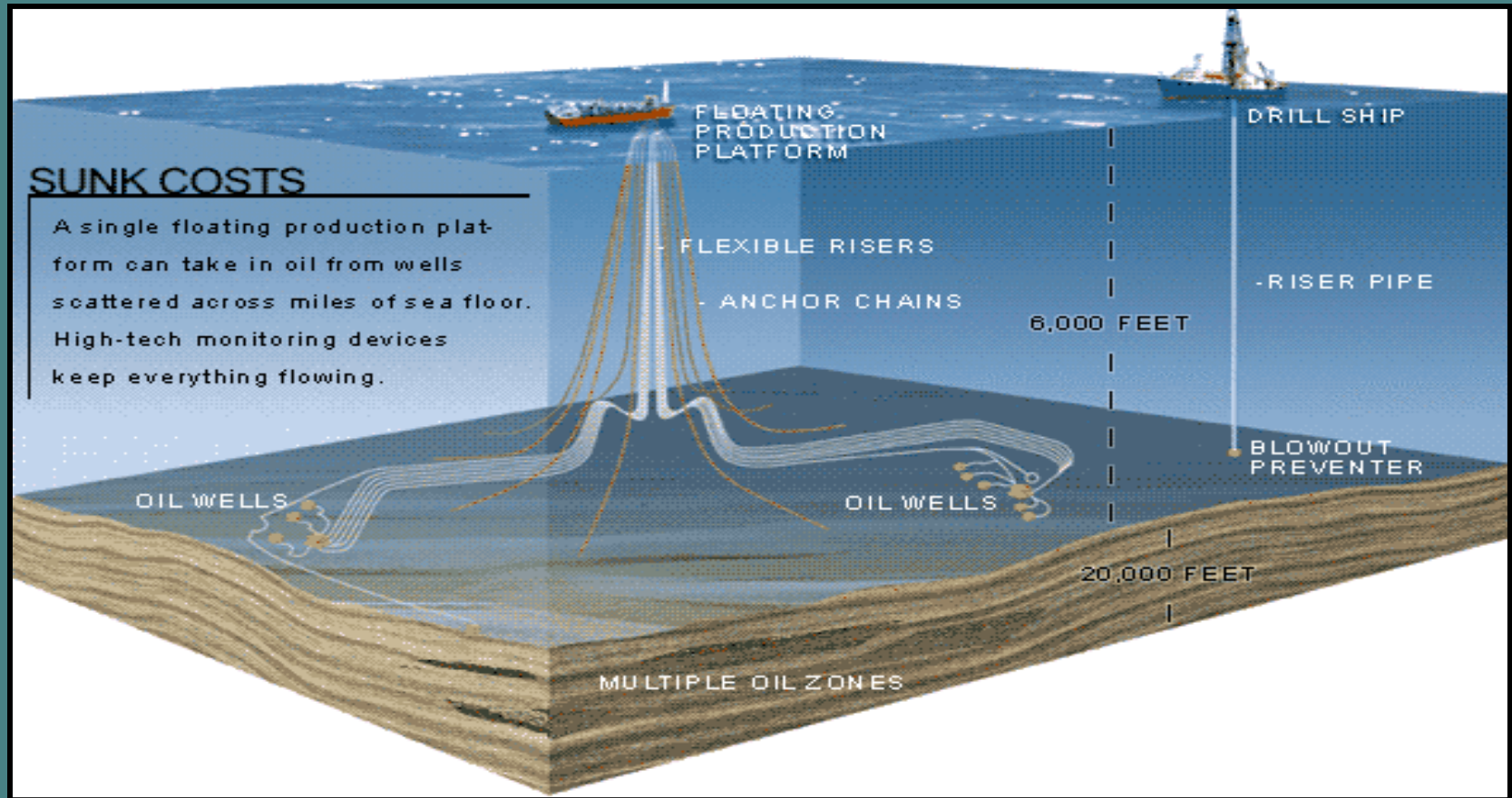
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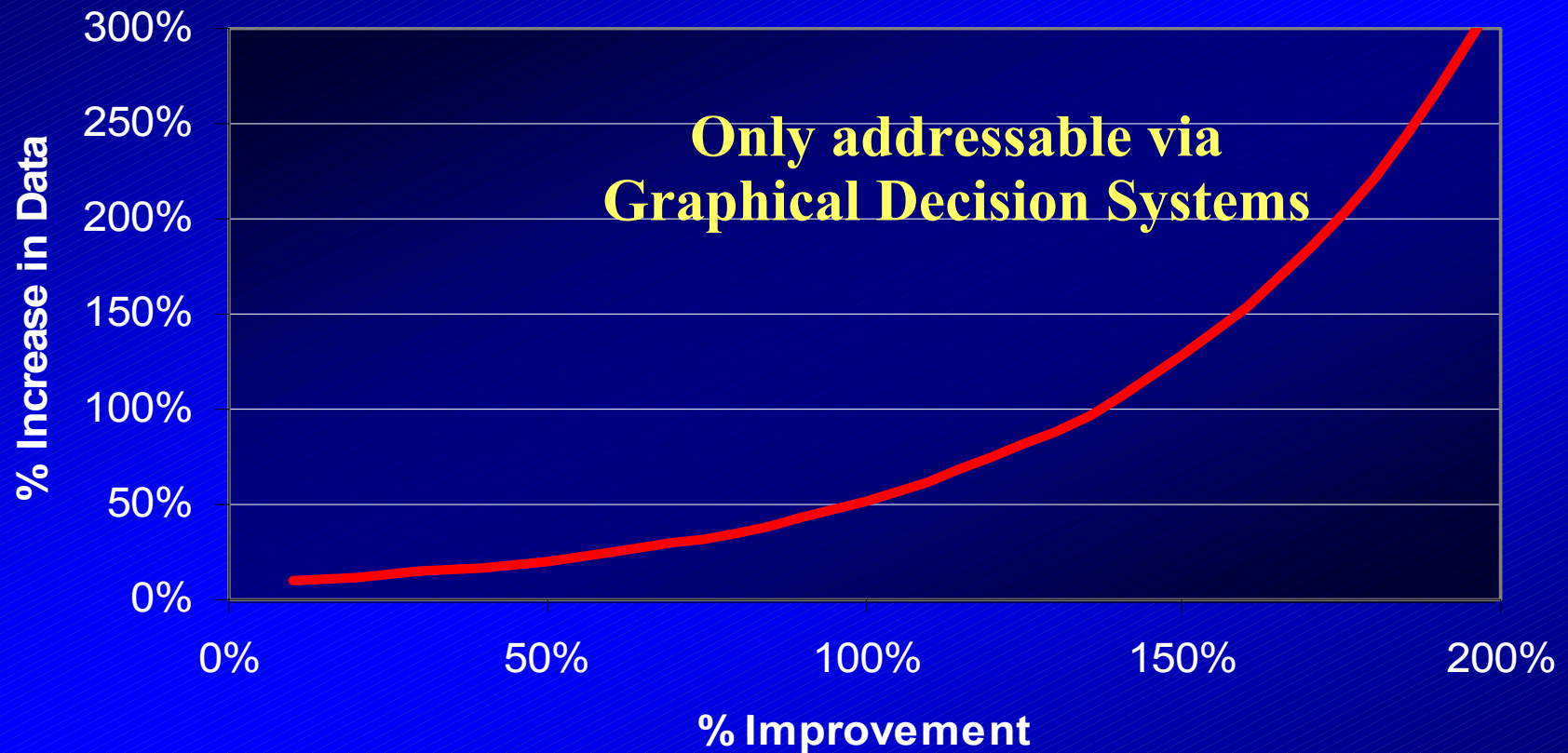


The Complexity of Oil Exploration

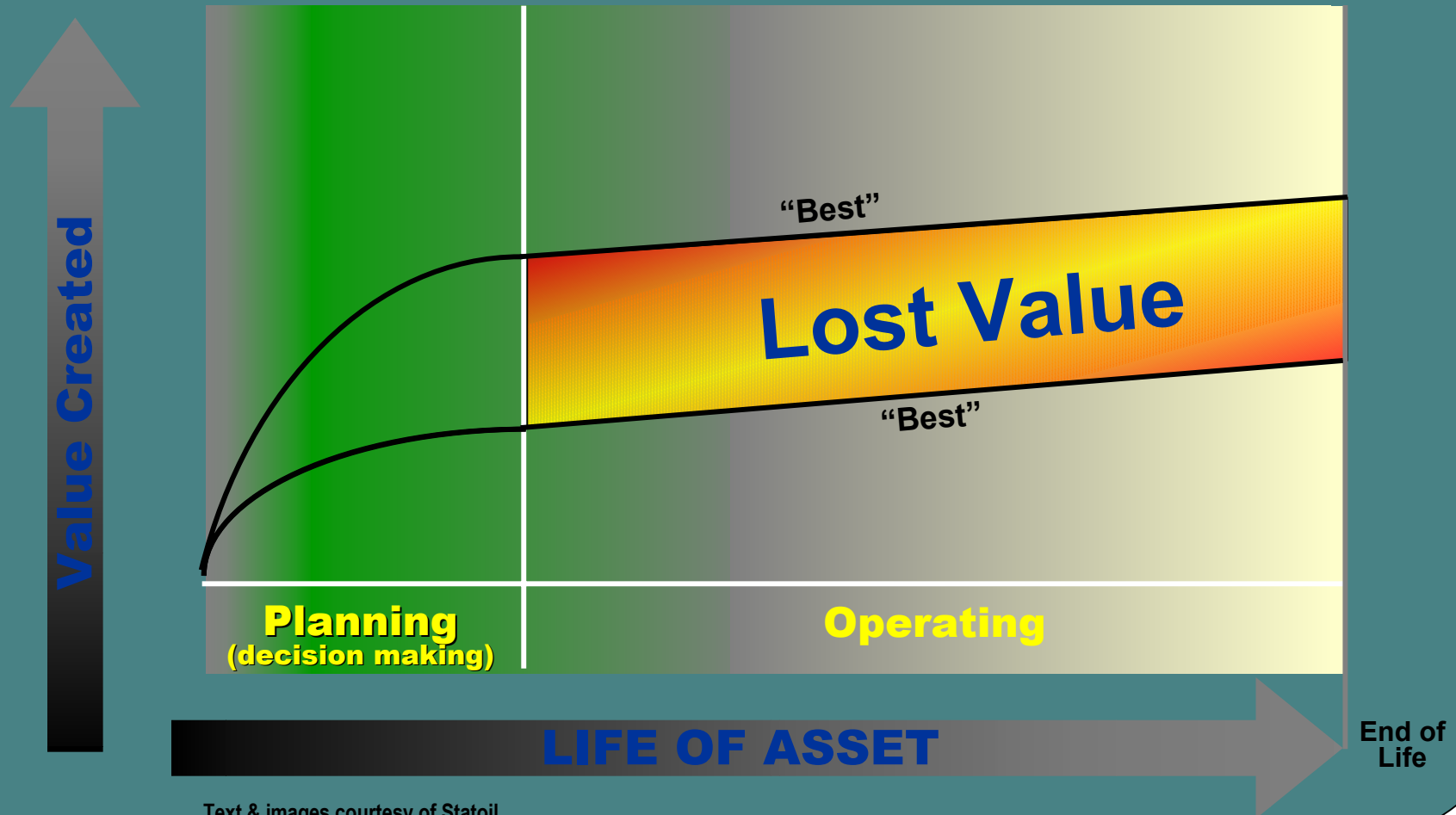


Text & images courtesy of Statoil

Hypothetical Data Growth to Achieve Recovery Factor Improvement



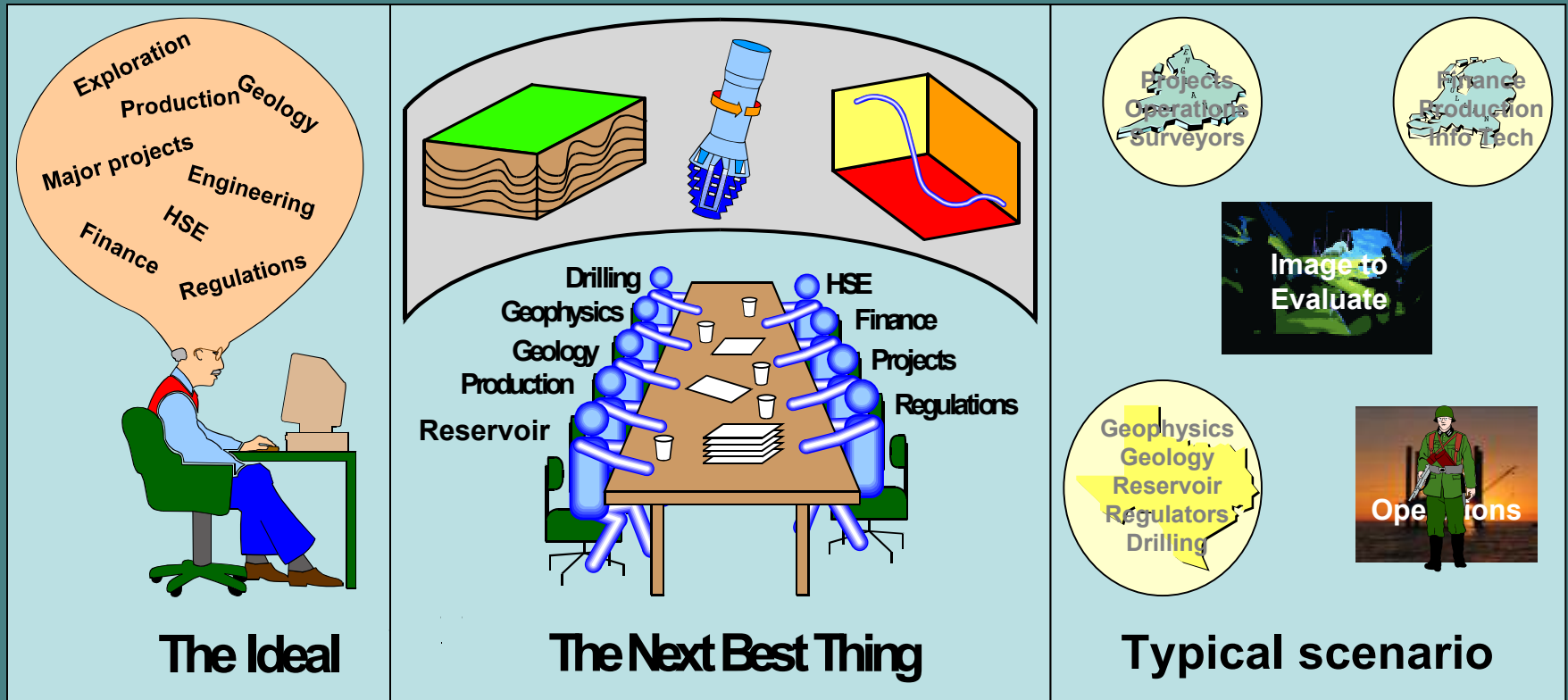
Value of Decision-Making



Thus ...

**The energy world is
relying on large
quantities of data to
improve decision
making**

“Super Professional” vs. Collaborative Decision-making



Source: Cambridge Energy Research Associates.
20807-44

The Problem ...

Getting the Decision Makers and the **Data** Together

The Approach ...

Getting the Decision
Makers and the
Image Together in
Real Time on a
Global Basis

Resolution Definitions

	Refresh Rate	Format	Resolution	Mbps	Frame/sec
Standard Definition	48 Hz	PAL 480i	720x480	66	24
	60 Hz	NTSC 480i	640 x480	73	30
High Definition	60 Hz	HD 480p	640x480	442	60
	60 Hz	HD 1080i	1920x1080	1506	30
	60 Hz	HD 720p	1280x720	1327	60
	60 Hz	W-XGA	1280x768	1415	60
Extreme Definition	60 Hz	HD 1080p	1920x1080	3012	60
	96 Hz	Low Viz	3072x768	5435	96
	96 Hz	High Viz	3840x1024	9059	96
	120 Hz	Target	6146x2048	36250	120

Plus

The immersive visualization industry wants:

- **un-compressed signals,**
 - For studying the image
- **signal to be bi-directional**
 - with multicast and eventually any-cast capabilities,
- **to have keyboard and mouse control at a distance,**
- **this to be in real time**
 - (for keyboard and mouse feel over a global connection),
- **a stereo emitter signal to travel with the image**
 - and sync active stereo signals,
- **to have a data channel to sync with this information**
 - to exchange files and video conference with the computer image.



Products

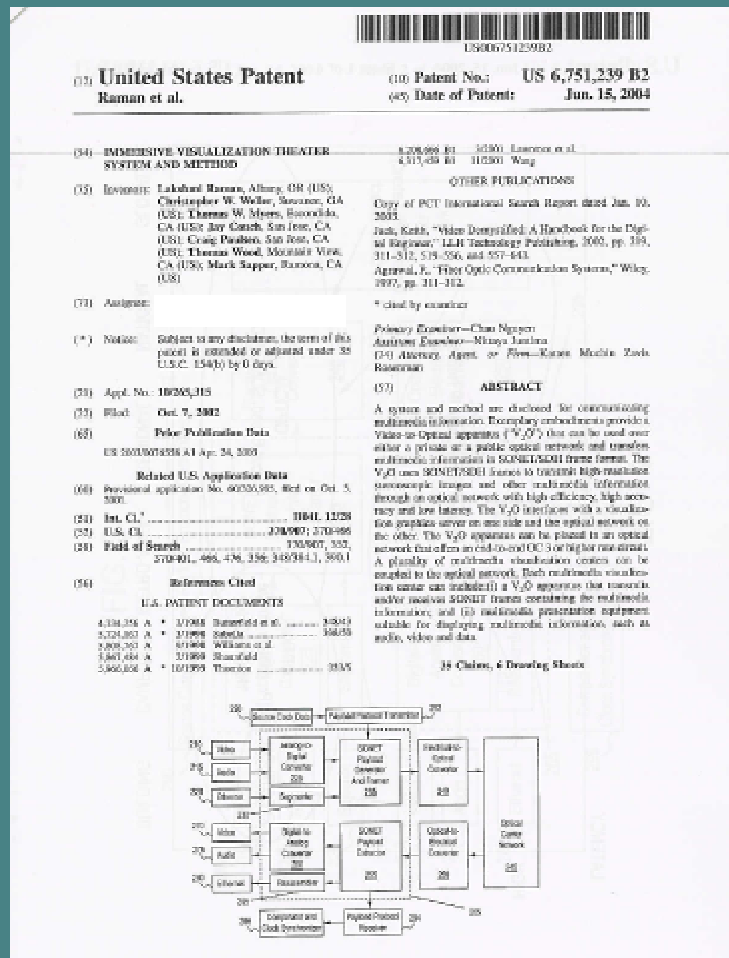
	Product 1	Product 2	Product 3	Product 4	Product 5
Transmission	Optical 2.5 Gbps	Optical 155 Mbps	Optical 45 Mbps	Optical A-Modulation	Electrical 1 to 54 Mbps
Maximum Resolution	1280x1024 96 Hz	1600x1200 98 Hz	1600x1200 98 Hz	2048x2048 120 Hz	1600x1200 98 Hz
Data Channel	10 Mbps	1 Mbps	Parallel	Parallel	Parallel
Keyboard/Ms	No	Yes	Yes	Yes	Yes
Audio	Stereo Audio	Stereo Audio	Stereo Audio	Stereo Audio	Stereo Audio
Video	Active Stereo	Active Stereo	Active Stereo	Active Stereo	Active Stereo
Gen Lock	No	No	Yes	Yes	Yes
<0.25 Latency	18,000 kms	12,000 kms	12,000 kms	65 kms	10,000 kms
Compression	None	Proprietary*	Proprietary*	None	Proprietary*



Time Line

Proprietary Compression uses a catch-up function that allows for uncompressed viewing of still image

Technology

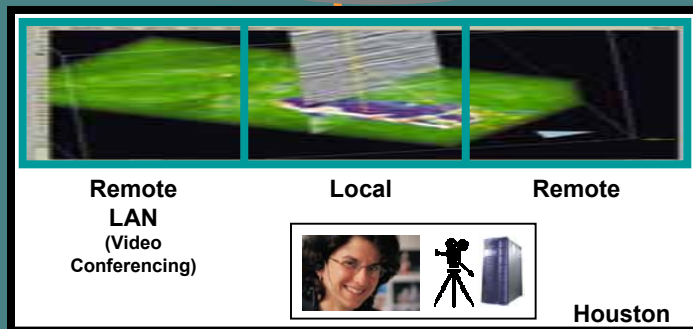


- **US Patents complete International Pending**
- **Proprietary Compression Patents Pending based on a variation of MPEG/Wavelet with catch-up capabilities**
- **Handle Multiple Signals (Audio, Video, Data and Stereo Emitters) in Sync**
- **Gen Lock for Multiple Screens**
- **Multicast and Broadcast capabilities**
- **Compliant to Network Standards**

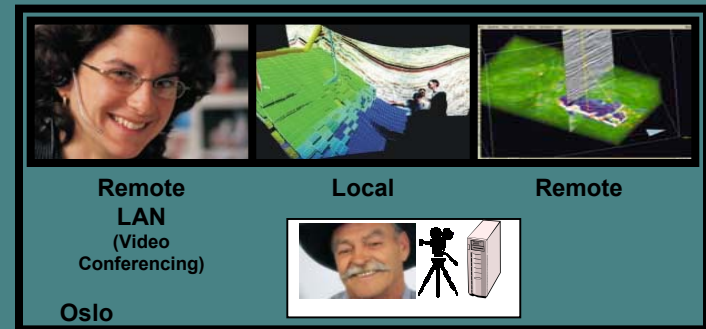
Multiple Screen Approach



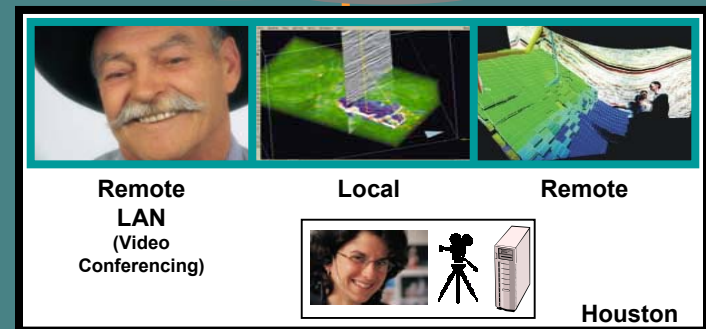
Remote Collaboration with Video Conferencing



Multiple Interfaces

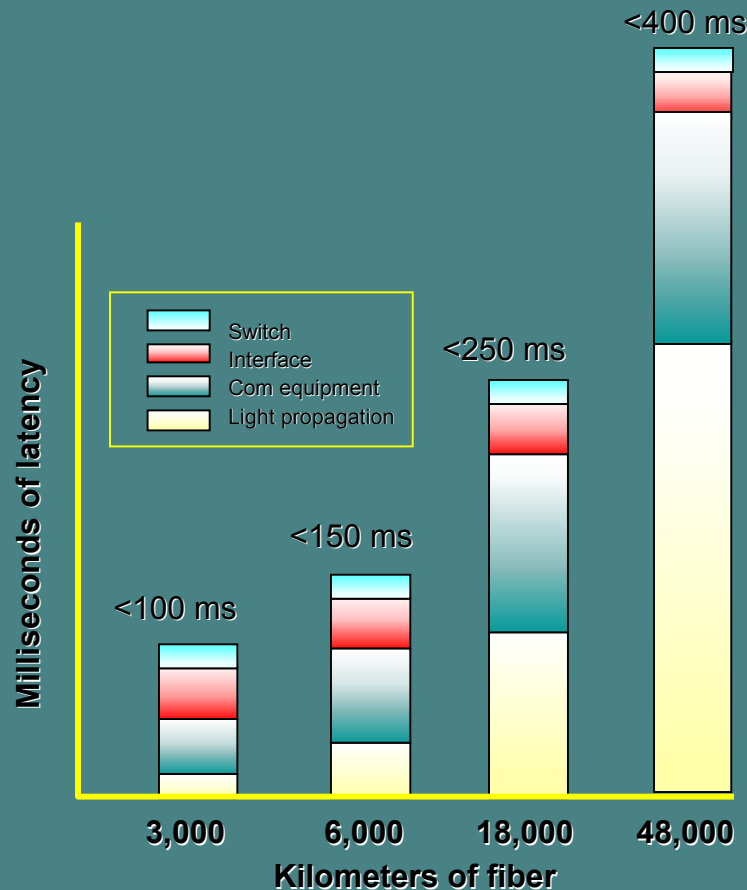


Remote Collaboration with Video Conferencing



Single Interfaces

Wide Area Distance Tests



- **Proven Performance**
- **18,000 km Partner Test**
 - Latency under ¼ sec
 - Passed
 - Optical Tests
 - Jitter Tests
 - Video Tests
 - Data Tests
- **48,000 km Carrier Test**
 - Latency under 0.4 sec
 - Passed
 - Optical Test
 - Jitter Tests
 - Video Tests
 - Data Tests

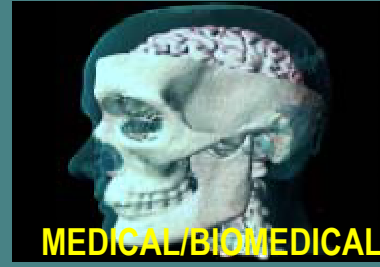
Applications



ENERGY

[Link To Energy Video](#)

**Seismic Analysis
Exploration
Operations
Simulation/Modeling
Sensor Monitoring**



MEDICAL/BIO MEDICAL

**Collaborative Surgery
Bio-Medical Sciences
Sensor Monitoring
Simulation/Modeling
Diagnostics**



GOVERNMENT/MILITARY

[Link To NPR Audio on Government](#)

**Operations
Command/Control
Simulation/Modeling
Security and Defense
Sensor Networking**



EDUCATION/RESEARCH

**Physical Sciences
Engineering
Research Partnering
Industry Partnering
Distance Learning**



MANUFACTURING

**3D Modeling
Simulation
CAD/CAM/CAE
Architectural Design
Design Reviews**

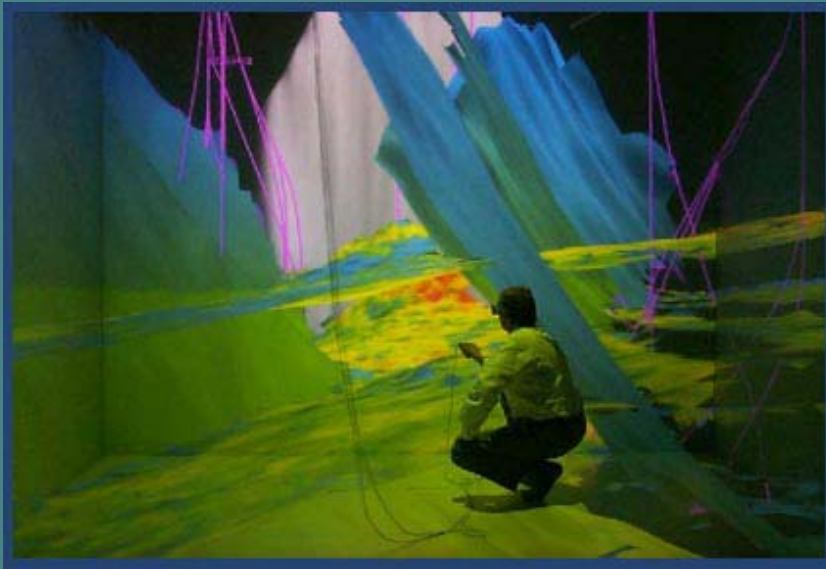


MEDIA

**Content Editing
Content Delivery
Advertising
Cultural Content
Entertainment**

Our holdings have installed image equipment at over 2000 sites in 40 counties,
20 sites have the distributive computing interfaces today

The Future of the Technology



- **Multiple Wireless Technologies**
 - Targets are with 4G Wireless & 3G Wireless
- **IPv6 Capability**
 - Any Cast Capabilities
 - Device Level Addressing
- **Extreme Definition Entertainment**
 - Digital Cinema
 - Location Based Entertainment
- **High Definition Video Conferencing**
 - Done!

Conclusion

The Technology Offers:

- **A Global Collaboration Tool**
 - Tested at over 48,000 km
 - Low Latency mean real time
 - Open-Architecture (Hardware/Software)
- **Compatible with Multiple Screens**
 - Gen Lock Capabilities
 - From a single screen to 7 screen Planetariums
 - Multiple Capabilities
- **Deployed Today at Over 50 Customer Sites**
 - Energy
 - Government
 - Manufacturing
- **Future Potential being Developed**
 - Wireless Technologies
 - IPv6 Interfaces
 - Rich Digital Media
- **This is Today's Technology for Tomorrow's World**



Graham Kent on our
Network Vision

Questions?

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